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ABSTRACT

The study was designed to analyze the types and frequencies of individualized education program (IEP) goals selected for 102 elementary learning disabled students in resource rooms (LDR) and 94 learning disabled students in self-contained classrooms (LDSC) and to compare the learning disabilities teachers' assessments of progress made on the goals by these groups of students. A subsample to rate student progress consisted of a random selection of 61 elementary students from the LDR and 62 elementary students from the LDSC samples. Analyses using the Statistical Package for the Social Sciences were performed to compute frequency counts of different variables, t-tests, x squared tests, analyses of covariance, stepwise regression analyses, and T-score conversions. Results indicated that IEP goals were highly individualized. By analyzing goal frequencies, patterns, categories and progress, the study demonstrates that each student's educational programing was developed to match unique learning difficulties. In most cases, goal categories were not associated with a particular program model (LDR or LDSC), nor was goal progress associated with a particular educational ability and achievement level characteristic. Frequency of goal categories used in the LDR and LDSC programs varied according to duration of enrollment and to reading and math achievement levels. (Author/CL)

AN ANALYSIS OF INDIVIDUALIZED EDUCATION PROGRAM GOALS SELECTED FOR LEARNING-DISABLED STUDENTS

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Paper presented at the "1983 ACLD International Conference"

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ABSTRACT

AN ANALYSIS OF INDIVIDUALIZED EDUCATION PROGRAM GOALS SELECTED FOR ELEMENTARY SCHOOL LEARNING-DISABLED STUDENTS

by

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The study provides educators with a conceptual and statistical procedure that can be adapted for use nationwide to analyze the instructional characteristics of the IEP goals of learning-disabled students, as well as students in other special education programs. This study was designed to analyze the types and frequencies of individualized education program goals selected for elementary learning-disabled resource (LDR) and self-contained (LDSC) students in Fairfax County Public Schools, Fairfax, Virginia, and to compare the learning disabilities teachers' assessment of progress made on the goals by these groups of students.

The sample was randomly drawn and included IEPs for 102 LDR and 94 LDSC students from 32 elementary schools. A subsample to rate student progress consisted of a random selection of 61 elementary students from the LDR and 62 elementary students from the LDSC samples.

All analyses in this study were completed by using the Statistical Package for the Social Sciences (SPSS) on the Hewlett-Packard 3000 computer.

The SPSS program was used to compute frequency counts of different variables, t-tests, X^2 tests, analysis of covariance, stepwise regression analysis, and T-score conversions.

The results indicate that the IEP goals written for learning-disabled students are highly individualized. By analyzing goal frequencies, patterns, categories, and progress, this study demonstrates that the educational programming for each student is developed to match his or her unique learning difficulties. In most cases, goal categories are not associated with a particular program model (LDR and LDSC), and goal progress is not associated with a particular educational ability and achievement level characteristic included in this study.

The frequency of different types of goal categories used in the LDR and LDSC programs varied according to the number of months a student has been enrolled in a special education program and reading and math achievement levels.

The method developed for analyzing IEP goals and students' progress made toward achieving these goals will provide school districts with practical procedures for planning and evaluating their programs by using IEP data.

THE PROBLEM AND ITS SETTING

Public Law 94-142, Education for All Handicapped Children Act, signed into law in 1975, has clearly been one of the most significant pieces of legislation in this nation's history to affect handicapped youth. This legislation guarantees that all handicapped individuals between the ages of 3 and 21 be identified and provided with a free, appropriate public education.

At the foundation of this legislation is the requirement of the Individualized Education Program (IEP). The IEP is both a management and instructional tool that assures that all children who are handicapped and require special education services, receive those services that are appropriate. The IEP serves as a mechanism for guaranteeing that students' specially designed instruction is delivered and evaluated.

During the last five years, many public and private school educators who work with handicapped students have been involved with the IEP process. A great amount of time, energy, and funds has been spent on the development of IEPs. Much of the IEP research that has been conducted thus far has centered on determining whether the IEPs were in compliance with the law. Walker and Kukic (1979) maintain that being in paper compliance with IEP requirements is a relatively easy task. Unfortunately, the use of IEPs in students' instructional programs is not an operational reality in most school classrooms (Safer, Morrissey, Kaufman, & Lewis, 1978). The real challenge before educators is to study goals written on students' IEPs and to use this information in program planning and evaluation.

In a recent study by Marver and David (1978) of three states' experiences with IEPs (California, Massachusetts, and Montana), it was found that specific training in writing IEP goals should be given to special education personnel. The findings of this study also indicated that most of the IEPs met the requirements specified in Public Law 94-142. However, the quality of IEPs varied greatly, e.g., in some of the IEPs, the annual goals were indistinguishable from the short-term objectives. Marver and David (1978) concluded that if IEPs are to improve in quality, local education agencies will need to provide much technical assistance to their special education personnel.

The Purpose of the Study

This study examines the types of individualized education program goals selected for elementary learning-disabled resource and self-contained students in Fairfax County Public Schools and compares the learning disabilities teachers' assessment of progress made on the goals by these two groups of students.

The first subproblem is to compare the types and numbers of goals selected for students in the learning disabilities resource program with those selected for students in the learning disabilities self-contained program.

The second subproblem is to compare the relationship between a student's age, ability level, achievement level, and number of years in a special education program and the types of IEP goals selected.

The third subproblem is to compare the learning disabilities teachers' assessment of progress made on the goals by students in the learning disabilities resource and self-contained programs.

The Definition of Terms

Goals

Goals are written instructional statements, based on a student's current educational needs, that specify what each individual handicapped learner is expected to accomplish within a year's time. Goals represent the exact statements which are written on a student's IEP.

Goal Categories/Types of Goals

Goal categories/types of goals pertain to the classification of the IEP goals into 14 groups by specific content area. The groups combine segments of the Fairfax County Public Schools elementary curriculum guide (Fairfax County Public Schools Elementary Program of Studies), the Fairfax County Public Schools IEP Manual, and the federal definition for learning disability. Every goal written on a student's IEP is placed into one of the 14 goal categories.

Goal Number

The goal number represents the total sum of all goals written on a student's IEP.

Goal Pattern

The goal pattern is the unique design formed as a result of the assignment of goal categories to each goal on a student's IEP. For example, if a student has four goals written on the IEP and the categories assigned to those goals are 1,3,1,6, this arrangement (1,3,1,6) would be the student's goal pattern.

Goal Position

The goal position is the sequence in which the instructional statements appear on a student's IEP. For instance, goal position one includes all goals that appear first on students' IEPs.

METHODS AND PROCEDURES

The purpose of this study was to describe the IEP goals selected for elementary school learning-disabled resource and learning-disabled self-contained students and compare the progress made on the IEP goals by these two groups of students.

Sample Selection and Characteristics

The following procedures were used to select the students' IEPs.

1. Students with IEPs written between February and June 1981 were identified by searching a computerized roster of all handicapped students currently enrolled in FCPS.
2. After identifying 300 elementary level learning-disabled students (175 LDR and 125 LDSC students) who fulfilled this criterion, their specialized records files were reviewed on a school-by-school basis.
3. In order to select a representative group of approximately 100 LDR and 100 LDSC students from this pool of 300 possible candidates, a proportional sample of students was selected from each elementary school. For example, if a school had 15% of all LDR students in the original pool of 175, then 15% of the LDR students in the study sample of 100 were randomly selected from this school. The selection process included using a table of random numbers to choose the participants in this study. It should be noted that the study sample consisted of 94 LDSC and 102 LDR students who actually met the selection criteria.

Once the sample was determined, information about each student was obtained from the area specialized records file and recorded on data collection sheets. For the purpose of this analysis, it was necessary to convert chronological age, total number of years in special education, number of years in the LD

program, and current placement into months. Each goal was copied verbatim on the data collection sheets in exactly the same order as it appeared on the students' IEPs. (See Appendix A)

Elementary learning-disabled students from 32 schools were involved in the study. The LDSC students were selected from every school (12) that had classes for students with more severe learning problems. The LDR students were chosen from all 32 schools. The total number of special education teachers who instructed the handicapped students was 31 LDR and 28 LDSC teachers respectively. Although the proportion of students selected in this sample varied across schools, the data reported in Table 1 show that the actual numbers of students chosen in the LDR program were similar across schools and classrooms. However, the variability in the LDSC subgroup was much larger across schools because LDSC classrooms were located in only 12 schools and there were usually two or more classrooms of this type in each of these schools.

Table 2 presents a further analysis of the demographic characteristics of these subgroups. As shown in this table, the LDSC and LDR subgroups had similar chronological ages, were selected from the same grade levels, and included a similar number of boys and girls.

The educational, ability, and achievement level characteristics of the LDSC and LDR subgroups are reported in Table 3. These results show that the LDSC students were enrolled in special education programs for a significantly longer period of time than the LDR students, the WISC IQ levels were significantly higher for the LDR than LDSC students, and the achievement levels of the LDR students were significantly higher. Thus, the analysis of these data demonstrates that the LDSC subgroup suffered from more learning problems than the LDR subgroup. The only similarity between the educational characteristics

Table 1

Distribution of Handicapped Students Across Schools and Classes

	Number of Handicapped Students			
	Per School		Per Class	
	LDSC (N=94)	LDR (N=102)	LDSC (N=94)	LDR (N=102)
M	7.83	3.19*	3.36	3.29
SD	3.56	1.51	1.68	1.42
Range	3-16	1-8	1-9	1-8

*$p < .05$ ($t=11.79$, $df=194$)

Table 2

Demographic Characteristics of the Sample

	LDSC (N=94)	LDR (N=102)	Total	Frequency (X^2)
		Chronological Age		
M	126.99	123.52*	-	-
SD	15.12	16.91	-	-
Range	93-164	86-154	-	-
		Grade Level		
M	4.60	4.50**	-	-
SD	1.10	1.26	-	-
Range	2-6	2-6	-	-
		Sex		
Male	72	74	146	$X^2 = 0.24$,NS
Female	22	28	50	-
Total	94	102	196	-

*t=1.51,NS **t=0.63,NS

Table 3

Educational, Ability, and Achievement Level Characteristics of the LDSC and LDR Sample

	N	M	SD	Range	t
Months of Instruction in Special Education					
Months in Special Education					
LDSC	94	34.32	16.51	1-78	4.66*
LDR	102	23.00	17.51	4-76	
Months in LD					
LDSC	94	32.59	1.62	1-64	4.43*
LDR	102	22.23	17.04	4-74	
Months in Current Placement					
LDSC	94	23.09	11.95	1-62	0.41
LDR	102	22.23	17.04	4-74	
Ability Level (IQ) of Students					
WISC Full Scale					
LDSC	87	94.43	12.44	61-123	5.62*
LDR	98	104.75	12.48	79-139	
Stanford Binet					
LDSC	6	103.17	9.09	92-115	**
LDR	4	94.75	18.75	78-116	
Leiter					
LDSC	1	91***	-	-	
LDR	0	-	-	-	
Achievement Levels of Students					
Woodcock Johnson--Reading					
LDSC	56	78.61	8.79	65-113	6.37*
LDR	62	90.69	11.73	72-122	
Woodcock Johnson--Math					
LDSC	56	84.73	12.25	65-126	4.19*
LDR	62	94.03	11.79	65-123	
WRAT--Reading					
LDSC	38	84.24	13.87	56-115	3.44*
LDR	40	93.98	10.84	57-119	
WRAT--Math					
LDSC	38	85.24	12.54	48-114	3.99*
LDR	40	96.20	11.66	57-123	

*p < .05 **No t test administered because of small N ***Score obtained by one student

of these subgroups was in the proportion of students who repeated at least one grade and those who did not repeat any grade in school (41 and 53 for LDSC, and 34 and 68 for LDR, $X^2 = 1.78$, NS).

Procedures for Data Organization and Collection

In order to examine the types of individualized education program goals selected for elementary learning-disabled resource and self-contained students, it was necessary to develop a goal classification system. Therefore, the IEP goals of each LDR and LDSC student were classified into the following 14 goal categories which combine elements of the Fairfax County Public Schools elementary curriculum guide (Fairfax County Public Schools Elementary Program of Studies), the Fairfax County Public Schools IEP Manual, and the federal definition of learning disability.

Goal Category	Elements
1. English Language Arts	Written expression, grammar, spelling
2. Fine Motor Skills	Handwriting, small muscle activities
3. Gross Motor Skills	Body awareness, laterality, directionality, and normal development skills such as running, jumping, and ball handling
4. Mathematical Calculations	Seriation, numeration, addition, subtraction, multiplication, fractions, decimals, percents, ratios
5. Mathematical Reasoning	Quantitative concepts, time, money, measurement, and word problems
6. Reading Comprehension	Literal and interpretive meanings
7. Basic Reading Skills	Vocabulary, phonics, pre-reading skills, fluency, structural analysis
8. Science	Observation, investigation, environmental awareness
9. Social/Emotional Skills	Interaction, appropriate school behaviors, identification of values

Goal Category	Elements
10. Social Studies	Civic rights and responsibilities, map skills, community awareness
11. Verbal Communication	Receptive, expressive language
12. Sensory Perception	Visual and auditory discrimination, memory, figure-ground, and attending behavior
13. Study Skills	Organization, obtaining information, reference, and note-taking skills
14. Other	Goals that could not be appropriately placed in another category

As previously indicated (See Sample Selection and Characteristics), information was selected from the area specialized records file and written on Data Collection Sheets. This information included the student's name, date of birth, chronological age, LD program (either resource or self-contained), IEP date, sex, total number of years in any special education program, the date the next IEP conference is to be scheduled, number of years in a learning disabilities program, grade in which the student is currently enrolled, retainment status, triennial reevaluation date (when the student is to receive the next complete evaluation for special education eligibility), number of years in the current learning disabilities placement, and the learning disability processing problem. Additional information collected included IQ and achievement test scores. All students had been administered the WISC-R, Stanford Binet, or Leiter International Performance Scale as a part of the eligibility requirements for special education services. The students had also taken either the Woodcock-Johnson Psycho-Educational Battery (Part II--Tests of Achievement) or the Wide Range Achievement Test.

After goals were recorded on the data collection sheets, each goal was placed into the appropriate goal category. The number of that goal category

(1-14) was then inserted next to the goal. Following this procedure, a panel of experts reviewed the results to help improve the classification scheme.

For the purpose of selecting a subsample to rate student progress, 61 elementary students from the LDR and 62 elementary students from the LDSC samples described above were randomly selected to determine their teachers' assessment of students' progress on IEP goals. Thus, a total of 123 out of 196 students in the original sample were chosen for rating student progress. The first step in this process was to identify the special education teacher for each student.

As part of the administration of the rating scales, each teacher was instructed to place the appropriate code number (1 = no noticeable progress, through 4 = student has made much noticeable progress) which best described the amount of progress the student had made toward achievement of that goal since September, 1981, next to the IEP goal. (See Appendix B)

To determine the reliability of this instrument, each teacher (N = 57) completed a rating scale, then reassessed one of the students one week later. Twenty-eight learning-disabled self-contained students and 29 learning-disabled resource students were reassessed to determine the reliability. The rating scale was found to have a test-retest reliability coefficient of .92 (Pearson r) for assessments made by teachers on the first two goals. The first two goals were chosen for the reliability because all students in the subsample had at least two goals written on their IEPs.

RESULTS

All analyses in this study were completed by using the Statistical Package for the Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975) on the Hewlett-Packard 3000 computer. The subprograms used to complete the analyses concentrated on the following variables which were organized into an SPSS data file for each student: chronological age (CA), type of program, sex, months in special education, months in LD program, grade level, retention status, months in current special education placement, ability level, achievement level--reading, achievement level--math, total number of goals, school number, teacher number, type of goal category by position (1-8), ratings on each goal, T-score in reading, and T-score in math.

The SPSS program was used to compute frequency counts of different variables, t-tests, chi-square tests, analysis of covariance, and T-score conversions.

Subproblem One

Subproblem One: Compare the types and numbers of goals selected for students in the learning disabilities resource program with those selected for students in the learning disabilities self-contained program.

Table 4 shows the mean number of goals for students in the LDSC program was 3.97 (SD = 1.28) and the mean number of goals for students in the LDR program was 3.20 (SD = 0.91). The difference between these means was significant ($t=4.81$, $df=194$, $p < .01$). However, the range in the number of goals selected for students in the two programs was very much alike. Students in the LDSC program had between 2 to 8 goals written on their IEPs while students in the

LDR program had a range of 2 to 7 goals listed on their IEPs.

Table 4

Goals Used with LDR and LDSC Students

	LDR	LDSC
Mean	3.20	3.97
SD	0.91	1.28
Range	2-7	2-8

The total number of goals written for each program were as follows: 372 for the LDSC program and 326 for the LDR program. The difference between the total number of goals was not significant (X^2 = 3.16, df=1, NS).

As a further analysis of these data, Table 5 shows that 54 of the LDSC students (57%) had four or more goals while only 22 of the LDR students (22%) had four or more goals. In addition, the frequency counts of the number of students who worked on different numbers of goals showed that 65 LDR students (64%) had three goals. In comparison, only 36 LDSC students (38%) received three goals.

As a major part of this study, it was necessary to group the goals into 14 different instructional categories (see the list of those categories in the Procedures for Data Organization and Collection section). After completing this procedure, the number of occurrences of each category by goal position was summarized by using the SPSS frequency count routine. Based on the frequency of occurrence of goal categories by each goal position, the frequency of goal categories across all goal positions was tabulated. Table 6 shows that Basic Reading Skills, English Language Arts, and Mathematical Calculations were the most frequently used goal categories for both the LDSC and

Table 5

Number of Goals Worked on By Students

	LDSC	%	LDR	%
One	0	0	0	0
Two	4	4.3	15	14.7
Three	36	38.3	65	63.7
Four	33	35.1	14	13.7
Five	9	9.6	4	3.9
Six	6	6.4	3	2.9
Seven	4	4.3	1	1.0
Eight	2	2.1	0	0
Total	94	100.0	102	100.0

Table 6

Frequency of Occurrence of Goal Categories

Across All Goal Positions

Goal Category	LDSC	LDR	LDSC and LDR
1 English Language Arts	88	96	184
2 Fine Motor Skills	10	23	33
3 Gross Motor Skills	1	0	1
4 Mathematical Calculations	79	57	136
5 Mathematical Reasoning	23	14	37
6 Reading Comprehension	49	42	91
7 Basic Reading Skills	91	66	157
8 Science	0	0	0
9 Social/Emotional Skills	7	1	8
10 Social Studies	8	0	8
11 Verbal Communication	2	1	3
12 Sensory Perception	6	18	24
13 Study Skills	5	8	13
14 Other	3	0	3
Total	372	326	698

LDR groups. These three goal categories represent 67% of all the goals chosen for students in the sample.

To assist with additional analysis of IEP goals, each unique sequence of goal categories identified on each student's IEP was assigned a goal pattern number. It should be noted that the order in which each goal category occurred in the sequence was not used as a criterion for determining goal patterns. For example, 4,6,7 and 6,7,4 were considered as one goal pattern.

Across both groups of students, there were 116 unique goal patterns selected for the 196 students. Appendix C shows the 64 patterns that were used with the LDSC students and the 62 patterns that were used with the LDR students. The difference between the number of goal patterns used with the LDSC and LDR students was not significant (X^2 = .04, DF=1, NS). The most frequently occurring goal pattern was used by 9 students in the LDSC group. This pattern was as follows: Basic Reading Skills, English Language Arts, and Mathematical Calculations. In the LDR group, the most frequently occurring goal pattern was used by 10 students, and included: Mathematical Calcualtions, Reading Comprehension, and English Language Arts.

Table 7 further illustrates the uniqueness of each one of these goal patterns, by listing every goal pattern used by more than one student in the study. Of the 116 goal patterns selected for the 196 students, 89 (77%) of them were used with just one student. Only 10 of the goal patterns were common to both the LDR and LDSC students. These 10 patterns are listed in Table 8.

As indicated in Table 8, the two most frequently occurring goal patterns were used with 13 different students. These patterns were as follows:

Table 7

Frequencies of Goal Patterns Used by More than One Student Combined Across the LDR and LDSC Programs

Pattern	Frequency of Use	Pattern	Frequency of Use
1	4	53	13
2	6	68	2
5	5	75	5
7	2	76	2
13	4	77	2
14	3	81	4
15	4	82	3
16	3	83	4
20	2	87	3
21	7	90	2
23	13	92	2
38	2	93	2
43	3	96	2
50	3		

Table 8

Goal Patterns Common to LDR and LDSC Students

Goal Pattern Number	Description of Goal Patterns	Frequency of Occurrence	
		LDR	LDSC
1	Mathematical Calculations English Language Arts Basic Reading Skills Reading Comprehension	1	3
5	Reading Comprehension Basic Reading Skills English Language Arts	3	2
7	Mathematical Reasoning English Language Arts Reading Comprehension	1	1
13	Mathematical Calculations English Language Arts	3	1
14	English Language Arts Reading Comprehension	2	1
16	Basic Reading Skills English Language Arts	2	1
21	Basic Reading Skills (2) Mathematical Calculations	2	5
23	Basic Reading Skills English Language Arts Mathematical Calculations	4	9
50	English Language Arts (2) Basic Reading Skills Mathematical Calculations	1	2
53	Mathematical Calculations Reading Comprehension English Language Arts	10	3

(a) Basic Reading Skills, English Language Arts, and Mathematical Calculations; and (b) Mathematical Calculations, Reading Comprehension, and English Language Arts.

Subproblem Two

Subproblem Two: Compare the relationship between a student's age, ability level, achievement level, and number of years in a special education program and the types of IEP goals selected.

It should be noted that as part of analyzing the subproblem, the ability level scores were derived from the three different IQ tests administered to the students. One hundred eighty-five (94%) students had WISC-R scores, 10 students had Stanford Binet scores, and only one student had a Leiter. Each of these tests was given equal weight when used to measure a student's intellectual ability.

In order to conduct this analysis, only the five goal categories that occurred most frequently on students' IEPs were used in this analysis. These goal categories are: English Language Arts, Mathematical Calculations, Mathematical Reasoning, Reading Comprehension, and Basic Reading Skills. This analysis was conducted on all students whose IEPs included these five goal categories. A student was included in the analysis if one of these goal categories occurred at least one time on his or her IEP.

Chi-square tests were used to determine whether there was a significant relationship between the type of special education program students were enrolled in (LDR and LDSC) and their demographic, educational, and ability level characteristics. By applying the chi-square statistic, it was possible to analyze how the frequency of different goal categories was related to these program and student background variables. The chi-square

results reported in this section are for each one of the five goal categories listed above.

The variables used in the chi-square tests were as follows:

Chronological Age--86-104, 105-123, 124-142, and 143-164 months.

Months in Special Education--1-18, 19-37, 38-56, and 57-78 months.

Ability Level (IQ)--61-76, 77-92, 93-108, 109-124, and 125-139 full scale scores.

Reading Achievement--25-36, 37-47, 48-58, 59-69, and 70-81 standard scores.

Mathematics Achievement--18-28, 29-39, 40-50, 51-61, 62-72, and 73-78 standard scores.

A total of 25 chi-square tests were conducted by using the above five variables on all five goal categories. All significant findings are reported in Table 9.

Subproblem Three

Subproblem Three: Compare the learning disabilities teachers' assessment of progress made on the goals by students in the learning disabilities resource and self-contained programs.

In order to study this subproblem, t-test comparisons were made between the ratings of the LDSC (N=62) and LDR (N=61) subsamples. Table 10 shows that these subsamples had similar chronological ages, educational, ability, and achievement level characteristics as the total sample of LDR and LDSC students included in this study (See Table 3).

As the result of making these comparisons (see Table 11), it was found that the only significant difference in ratings occurred on the fourth goals ($t=2.41$, $df=49$, $p < .05$), where the average rating for the LDR group was 3.21 and 2.76 for the LDSC group.

After adjusting for chronological age, ability level, reading achievement level, and months in special education program by using the analysis of covariance (ANCOVA), it was found that these subsamples were not significantly different in teachers' ratings of progress. The ANCOVA findings are reported in Table 12 for the fourth goal position.

Table 9

Chi-Square Relationships Between Goal Categories and Program and Student Variables

Variable	Frequency (x^2)	LDR	LDSC
		English Language Arts Goals	
Months in Special Education	$x^2 = 16.30$, $df = 3$, $p < .01$	This goal category was most frequently used for students enrolled between 1-37 months.	This goal category was used most often for students who were enrolled for longer periods of time (38-78 months).
Ability Level (IQ)	$x^2 = 20.55$, $df = 4$, $p < .01$	This goal category was used most frequently for students with higher full scale IQ scores (93-139).	This goal category was most frequently selected for students with lower full scale IQ scores (61-108).
Reading Achievement	$x^2 = 25.60$, $df = 4$, $p < .01$	This category was found most frequently with higher achieving students (48-81 standard scores).	This category was used most often with lower achieving students (25-58 standard scores).
Mathematics Achievement	$x^2 = 22.52$, $df = 5$, $p < .01$	This goal category was most frequently selected for higher achieving students (40-72 standard scores).	This was most often chosen for the lower achieving students (18-50 standard scores).
		Mathematical Calculations Goals	
Ability Level (IQ)	$x^2 = 9.79$, $df = 4$, $p < .05$	This goal was most often selected for students with higher full scale IQ scores (93-139).	Students with lower full scale IQ scores (61-108) had this category most frequently selected.
Reading Achievement	$x^2 = 21.39$, $df = 4$, $p < .01$	This category was most frequently used with higher achieving students (48-81 standard scores).	This category was most often selected for lower achieving students (25-58 standard scores).
Mathematics Achievement	$x^2 = 19.89$, $df = 4$, $p < .01$	This goal category was found most often among the higher scoring students (40-61 standard scores).	Lower achieving students (29-50) most frequently had this goal category included in their IEP.

Variable	Frequency (x^2)	LDR	LDSC
Mathematical Reasoning Goals			
Chronological Age	$x^2 = 9.61$, df = 3, $p < .05$	This goal category was most frequently selected for younger students (86-123 months).	This goal category was most often used for older students (124-164 months).
Months in Special Education	$x^2 = 8.78$, df = 3, $p < .05$	This goal category was most often used for students enrolled for shorter periods of time (1-37 months).	Students enrolled for longer periods of time most often had this goal category (19-78 months).
Reading Achievement	$x^2 = 13.80$, df = 4, $p < .01$	This goal occurred most often among students with the highest reading scores (48-81 standard scores).	Students with the lowest reading scores (25-58) received this goal category most often.
Reading Comprehension Goals			
Months in Special Education	$x^2 = 12.84$, df = 3, $p < .01$	This goal category occurred most frequently for students enrolled in special education for a shorter period of time (1-37 months).	This category was selected for students enrolled for a longer period of time (19-78 months).
Reading Achievement	$x^2 = 11.11$, df = 3, $p < .05$	Students with the highest reading levels (37-69 standard scores) had this goal category occurring most frequently.	Students with the most severe reading difficulties (25-58 standard scores) had more goals written in this category.
Mathematics Achievement	$x^2 = 12.48$, df = 5, $p < .05$	Students with higher math scores (51-72 standard scores) had this goal category written most frequently.	Students with lower math scores (29-50) received this goal category more often.

Variable	Frequency (x^2)	LDR	LDSC
		Basic Reading Skills Goals	
Months in Special Education	$x^2 = 19.59$, $df = 3$, $p < .01$	This category was used most frequently for students with the lowest enrollment time (1-37 months).	This goal category was used with similar frequencies across enrollment times ranging from 1-56 months.
Ability Level (IQ)	$x^2 = 17.01$, $df = 4$, $p < .01$	This goal was used more frequently for students with higher full scale IQ scores (93-139 standard scores).	Students with lower full scale IQ scores (61-108) received this goal category most often.
Reading Achievement	$x^2 = 35.52$, $df = 4$, $p < .01$	The students with the highest reading levels (48-81 standard scores) had the most goals in this category.	The students with the lowest reading levels (25-58 standard scores) had the most goals.
Mathematics Achievement	$x^2 = 18.28$, $df = 5$, $p < .01$	This goal category most frequently was selected for students with the highest math scores (51-78 standard scores).	Students with the lowest math scores (18-50 standard scores) received this goal category most often.

Table 10

Chronological Age, Educational Level, Ability Level, and Achievement Level Characteristics of the LDSC and LDR Subsample

	N	M	SD	t
Chronological Age				
LDSC	62	126.76	15.08	1.32, NS
LDR	61	122.87	17.53	
Months of Instruction in Special Education				
LDSC	62	34.06	17.55	3.60 *
LDR	61	22.97	16.23	
Ability Level (IQ) of Students				
LDSC	62	94.63	12.94	3.82 *
LDR	61	103.80	13.67	
Reading Achievement Levels (T-Score) of Students				
LDSC	62	46.29	8.41	4.65 *
LDR	61	54.07	10.03	

*$p < .05$

Table 11

Ratings of Progress Made on the Goals by the LDR and LDSC Students in the Subsample

Goal Position		N	M	SD	t
1	LDSC	62	3.19	.90	.89, NS
	LDR	61	3.33	.77	
2	LDSC	62	3.21	.79	.69, NS
	LDR	61	3.11	.73	
3	LDSC	59	3.12	.83	1.37, NS
	LDR	53	3.32	.73	
4	LDSC	37	2.76	.93	2.41 *
	LDR	14	3.21	.43	
5	LDSC	14	3.43	.51	.94, NS
	LDR	5	3.20	.45	
6	LDSC	6	2.83	1.17	.96, NS
	LDR	2	3.50	.71	
7	LDSC	2	2.50	2.12	.33, NS
	LDR	1	3.00	.00	
8	LDSC	1	4.00	.00	.00, NS
	LDR	0	.00	.00	

*$p < .05$, df = 49

Table 12

Analysis of Covariance for Ratings of Student Progress on Fourth Goal Position

Source of Variation	Sum of Squares	df	MS	F	P
Covariates					
Ability Level (WISC-FS)	.14	1	.14	.20	NS
Chronological Age	.10	1	.10	.15	NS
Reading Achievement	.83	1	.83	1.22	NS
Months in Special Education	1.78	1	1.78	2.63	NS
Main Effects					
Program	.12	1	.12	.17	NS
Error	30.49	45	.68	.17	

CONCLUSIONS

The results of this study indicate that the IEP goals written for learning-disabled students are highly individualized. By analyzing goal frequencies, patterns, categories, and progress, this study demonstrates that the degree of educational programming for each student is developed to match his or her unique learning difficulties. In most cases, goal categories are not associated with the particular program model (LDR or LDSC) and goal progress is not associated with students' educational ability and achievement level characteristics.

This study also demonstrates that the frequency of different types of goal categories used in the LDR and LDSC programs varied according to the number of months a student has been enrolled in a special education program, a student's reading achievement level, mathematics achievement level, and ability level. Thus, it is possible that special education teachers pay close attention to these factors when deciding on which types of IEP goals to include in a student's instructional program.

A comparison of the ratings of student progress for the learning disabilities resource and learning disabilities self-contained programs and their lack of differences illustrates the truly individualized nature of assessing the student's IEP goals. These results are congruent with the other findings of this study which show that each student received highly individualized goal patterns; and therefore it follows that the assessments of their progress were also highly individualized. It appears that each student was assessed against his or her own rather than the LDR or LDSC groups' progress.

The similarities of IEP goals between students in the learning disabilities resource program and students in the learning disabilities self-contained program have implications for both administrators and teachers of these programs. Administrators should consider the possible benefits of grouping these students together for part of the school day according to students' IEP goal categories. Administrators might also contemplate whether or not the number of IEP goal patterns that were used with these students should be decreased. Perhaps, teachers could improve the effectiveness of their instruction by limiting the number of goal categories that they use with learning-disabled students. By modifying these program characteristics, the efficiency of administering LD programs and teaching LD students should be improved.

The most significant aspect of this research study has been the development of a conceptual and statistical procedure for studying IEPs. By following the research procedures used in this study, special education teachers, administrators, and researchers can more effectively use IEP goals in evaluating and modifying their programs.

This research procedure for organizing and classifying IEPs from existing student records can be adapted for use nationwide to analyze numbers of IEP goals, instructional categories frequently used, the degree of individualization of goal patterns and categories, the assessment of student progress, and the relationships between instructional categories and student progress to specific student characteristics.

IEPs continue to be one of the most important elements of Public Law 94-142. The most recent proposals to change the federal regulations have neither eliminated the IEP requirement, nor altered its basic content. Therefore, the development of practical research procedures to study various aspects of the IEP is essential.

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APPENDIX A

DATA COLLECTION SHEET

DATA COLLECTION SHEET

NAME: _____ DOB: _____ CA 10/81: _____

CURRENT PROGRAM: LDSC LDR IEP DATE: _____ SEX: _____

TOTAL # OF YEARS IN SPEC. EDUC. _____ IEP DUE DATE: _____

OF YEARS IN LD _____ GRADE: _____ TRIENNIAL DATE: _____

OF YEARS IN CURRENT PLACEMENT _____ LD FOR PLACEMENT: _____

ABILITY SCORE FOR PLACEMENT:	WISC-R	STANFORD-BINET	OTHER
	DATE _____	DATE _____	DATE _____
	F _____	MA _____	_____
	P _____	IQ _____	_____
	V _____		_____

ACHIEVEMENT SCORE FOR PLACEMENT:	W-J	WRAT	OTHER
	DATE _____	DATE _____	DATE _____
	R _____	R _____	_____
	M _____	S _____	_____
	WL _____	M _____	_____
	K _____		

	CATEGORY
GOAL #1:	
GOAL #2:	
GOAL #3:	
GOAL #4:	

School SY 81-82: _____ LD Teacher SY 81-82: _____

School SY 80-81: _____ LD Teacher SY 80-81: _____

	CATEGORY
GOAL #5:	
GOAL #6:	
GOAL #7:	
GOAL #8:	
GOAL #9:	
GOAL #10:	
GOAL #11:	
GOAL #12:	

APPENDIX B

RATING SCALE

IEP GOAL RATING SCALE

DIRECTIONS

1. Record the appropriate code number beside each IEP goal which best describes the amount of progress the student has made toward achievement of that goal since September 1981.

2. Rate progress as objectively as possible, keeping in mind the evaluation criteria previously established on the IEP to determine goal mastery.

3. Complete the rating scale as if you were actually grading a student's progress.

4. Use of this instrument will be limited to analyzing students' progress toward achieving IEP goals, and will not include assessing any individual's performance as a special education teacher.

CODES

1 = Student has made no noticeable progress toward goal achievement.
2 = Student has made little noticeable progress toward goal achievement.
3 = Student has made some noticeable progress toward goal achievement.
4 = Student has made much noticeable progress toward goal achievement.
5 = The goal has been deleted from the student's IEP.

Student's Name _____ Teacher _____

IEP Date _____ School _____

Primary Program Placement _____

CODES: 1 = NO NOTICEABLE PROGRESS
2 = LITTLE NOTICEABLE PROGRESS
3 = SOME NOTICEABLE PROGRESS
4 = MUCH NOTICEABLE PROGRESS
5 = DELETED FROM THE IEP

IEP GOALS TO BE RATED	PROGRESS MADE TOWARD GOAL ACHIEVEMENT SINCE SEPTEMBER 1981
GOAL #1:	
GOAL #2:	
GOAL #3:	
GOAL #4:	
GOAL #5:	
GOAL #6:	
GOAL #7:	
GOAL #8:	
GOAL #9:	

APPENDIX C

FREQUENCY OF GOAL PATTERNS

FREQUENCY OF GOAL PATTERNS

Pattern	Absolute Frequency		Pattern	Absolute Frequency	
	LDSC	LDR		LDSC	LDR
1	3	1	22	1	0
2	6	0	23	9	4
3	1	0	24	1	0
4	1	0	25	1	0
5	2	3	26	1	0
6	1	0	27	1	0
7	1	1	28	1	0
8	1	0	29	1	0
9	1	0	30	1	0
10	1	0	31	1	0
11	1	0	32	1	0
12	1	0	33	1	0
13	1	3	34	1	0
14	1	2	35	1	0
15	4	0	36	1	0
16	1	2	37	1	0
17	1	0	38	2	0
18	1	0	39	1	0
19	1	0	40	1	0
20	2	0	41	1	0
21	5	2	42	1	0

Pattern	Absolute Frequency		Pattern	Absolute Frequency	
	LDSC	LDR		LDSC	LDR
43	3	0	65	0	1
44	1	0	66	0	1
45	1	0	67	0	1
46	1	0	68	0	2
47	1	0	69	0	1
48	1	0	70	0	1
49	1	0	71	0	1
50	2	1	72	0	1
51	1	0	73	0	1
52	1	0	74	0	1
53	3	10	75	0	5
54	1	0	76	0	2
55	1	0	77	0	2
56	1	0	78	0	1
57	1	0	79	0	1
58	1	0	80	0	1
59	1	0	81	0	4
60	1	0	82	0	3
61	1	0	83	0	4
62	1	0	84	0	1
63	1	0	85	0	1
64	1	0	86	0	1

Pattern	Absolute Frequency		Pattern	Absolute Frequency	
	LDSC	LDR		LDSC	LDR
87	0	3	102	0	1
88	0	1	103	0	1
89	0	1	104	0	1
90	0	2	105	0	1
91	0	1	106	0	1
92	0	2	107	0	1
93	0	2	108	0	1
94	0	1	109	0	1
95	0	1	110	0	1
96	0	2	111	0	1
97	0	1	112	0	1
98	0	1	113	0	1
99	0	1	114	0	1
100	0	1	115	0	1
101	0	1	116	0	1
				94	102